Figure 1.

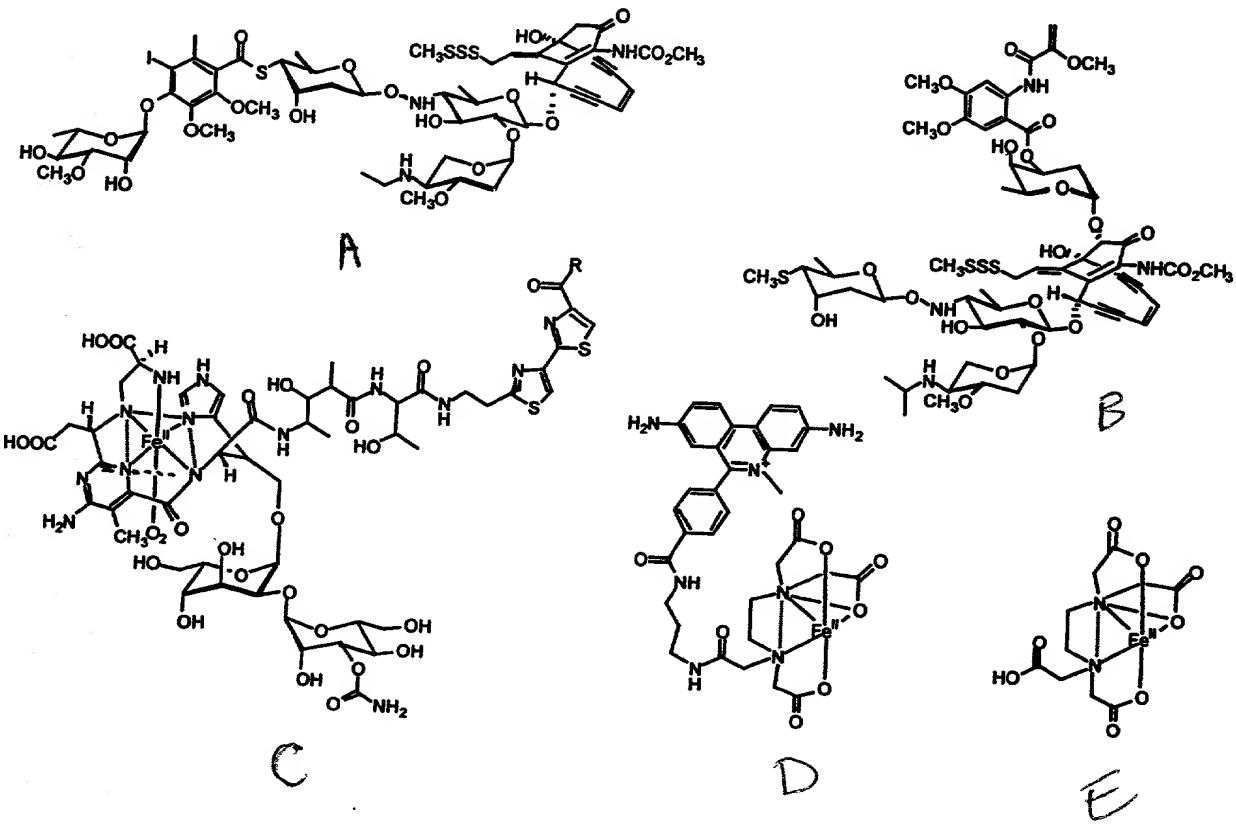


Figure 2.

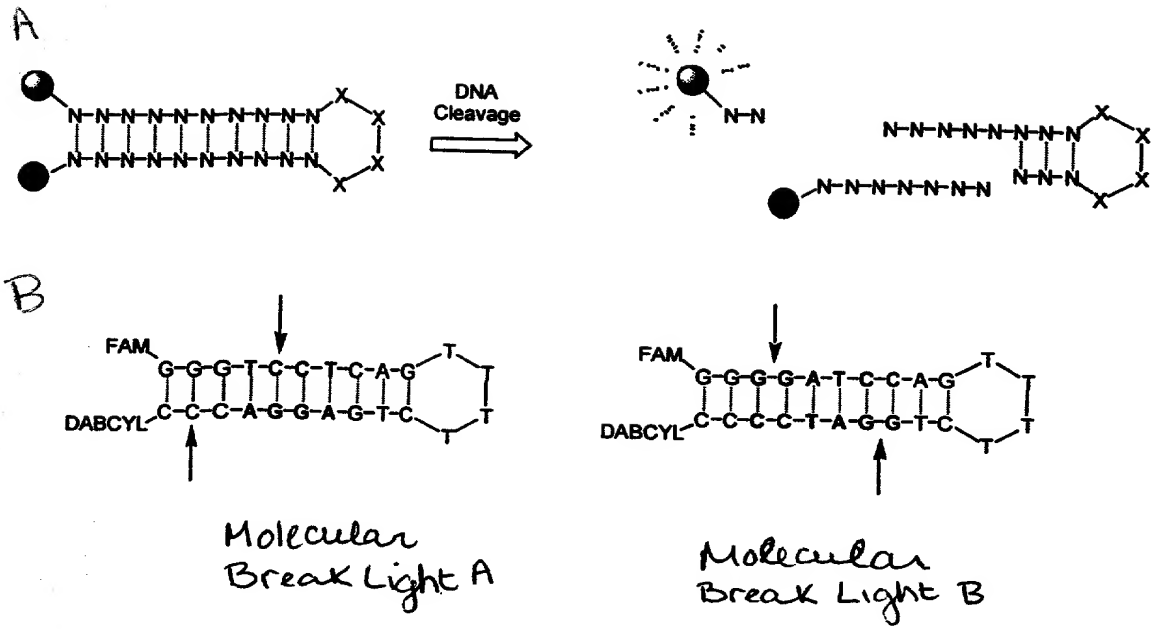
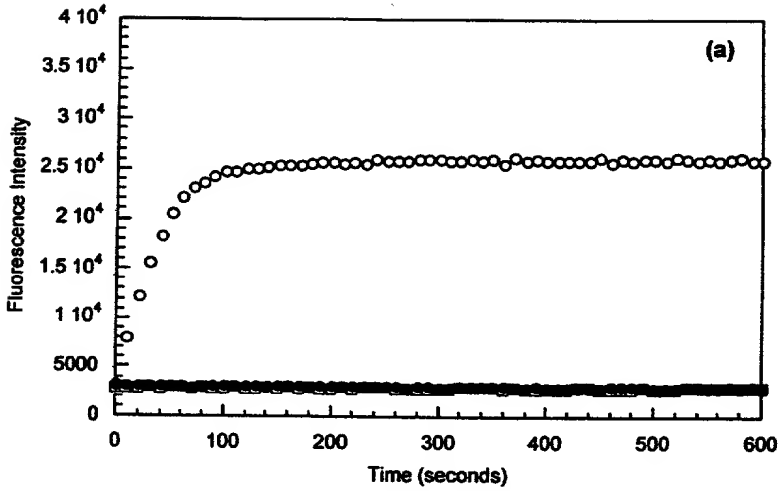

A
DNA
Cleavage
B
FAM
DABCYL
Molecular
Break Light A
FAM
DABCYL
Molecular
Break Light B

Figure 3.


(a)
Fluorescence Intensity
4 10⁴
3.5 10⁴
3 10⁴
2.5 10⁴
2 10⁴
1.5 10⁴
1 10⁴
5000
0
0
100
200
300
400
500
600
Time (seconds)

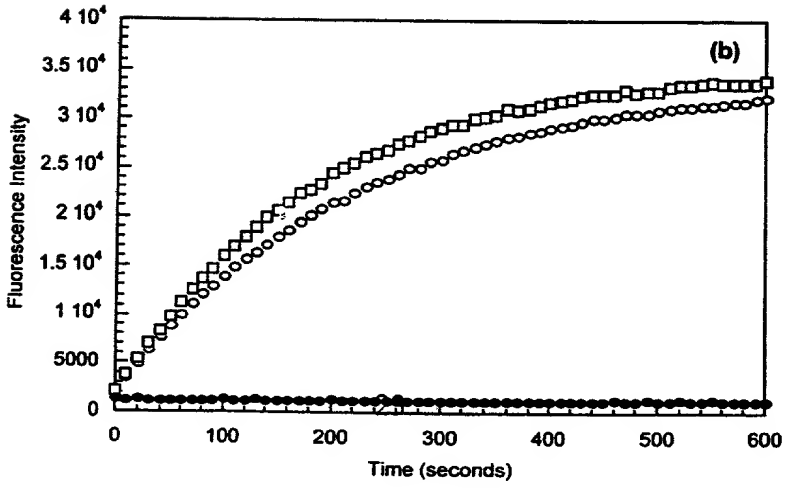

(b)
Fluorescence Intensity
4 10⁴
3.5 10⁴
3 10⁴
2.5 10⁴
2 10⁴
1.5 10⁴
1 10⁴
5000
0
0
100
200
300
400
500
600
Time (seconds)

Figure 4.

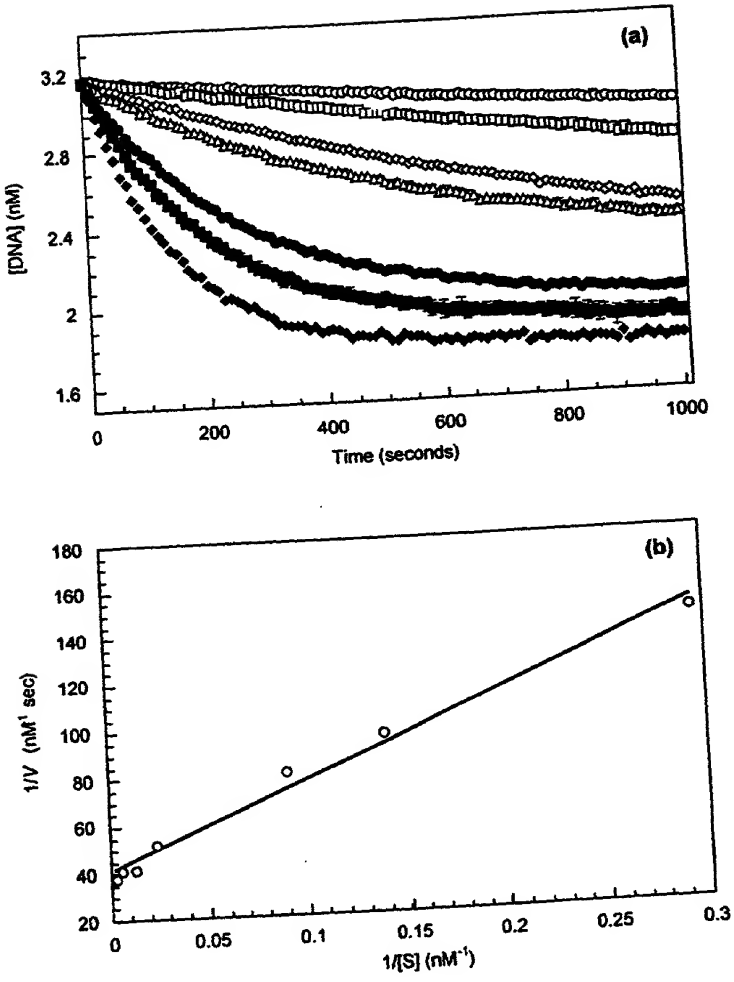
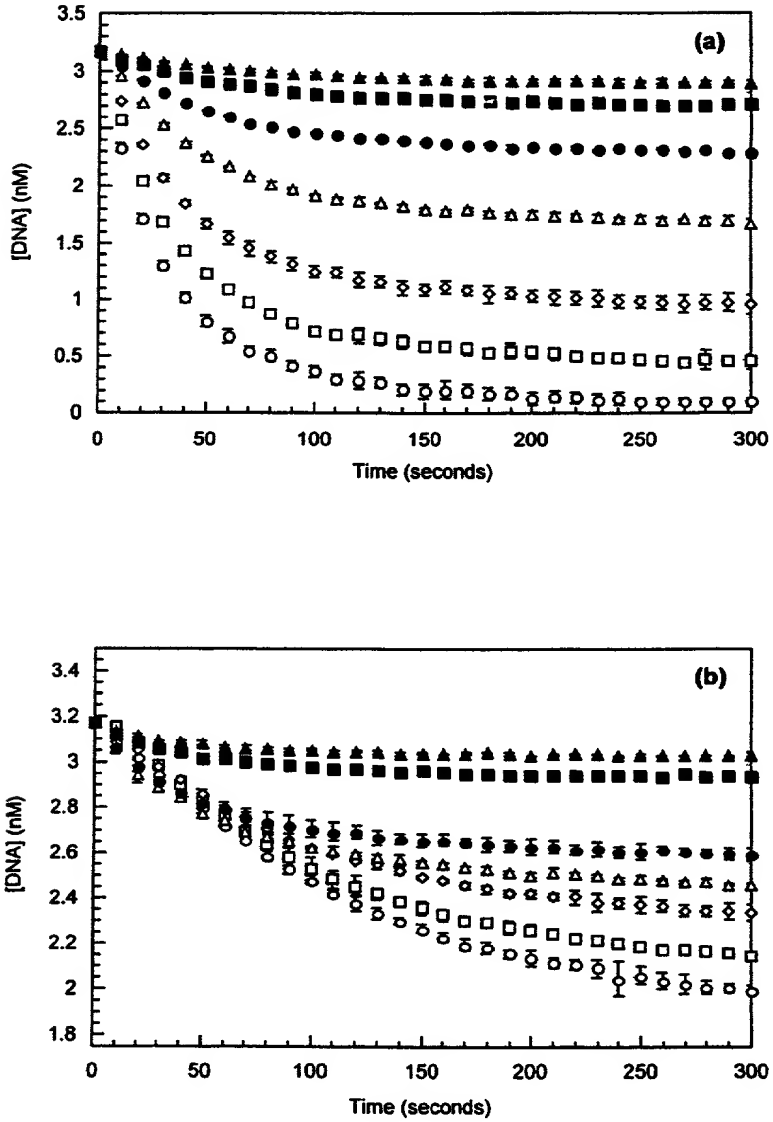

(a)
3.2
2.8
2.4
2
1.6
[DNA] (nM)
0
200
400
600
800
1000
Time (seconds)
(b)
180
160
140
120
100
80
60
40
20
1/V (nM¹ sec)
0
0.05
0.1
0.15
0.2
0.25
0.3
1/[S] (nM⁻¹)

Figure 6.


(a)
[DNA] (nM)
Time (seconds)
0
0.5
1
1.5
2
2.5
3
3.5
0
50
100
150
200
250
300
(b)
[DNA] (nM)
Time (seconds)
1.8
2
2.2
2.4
2.6
2.8
3
3.2
3.4
0
50
100
150
200
250
300

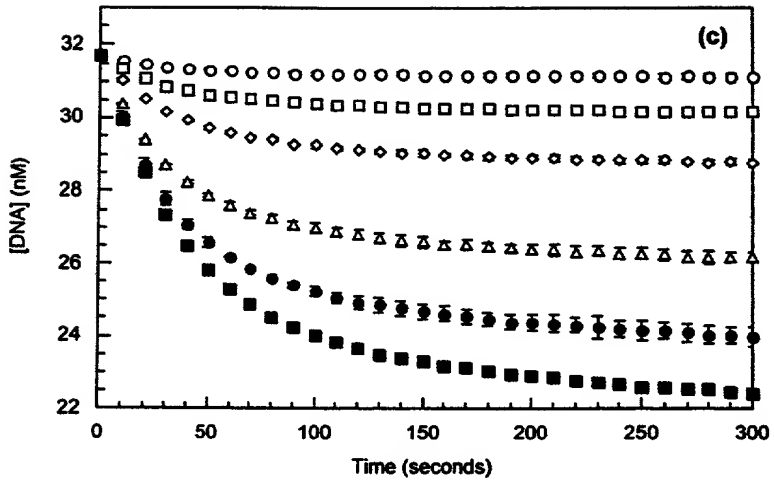


Figure 6 (continued).

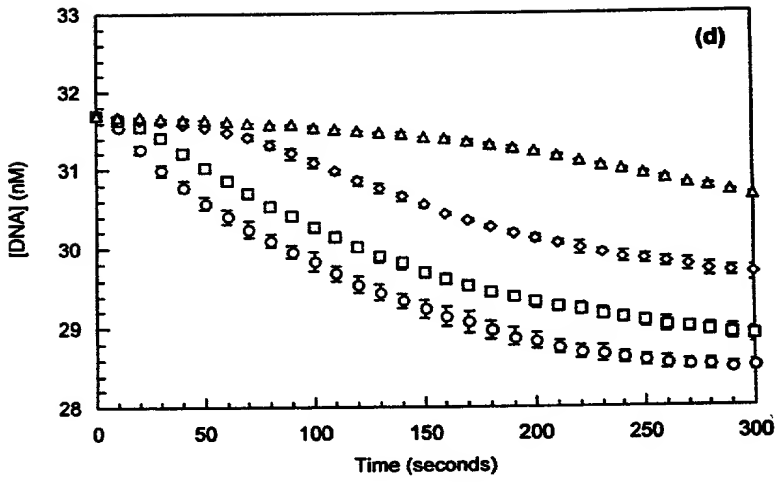


Figure 6 (continued).

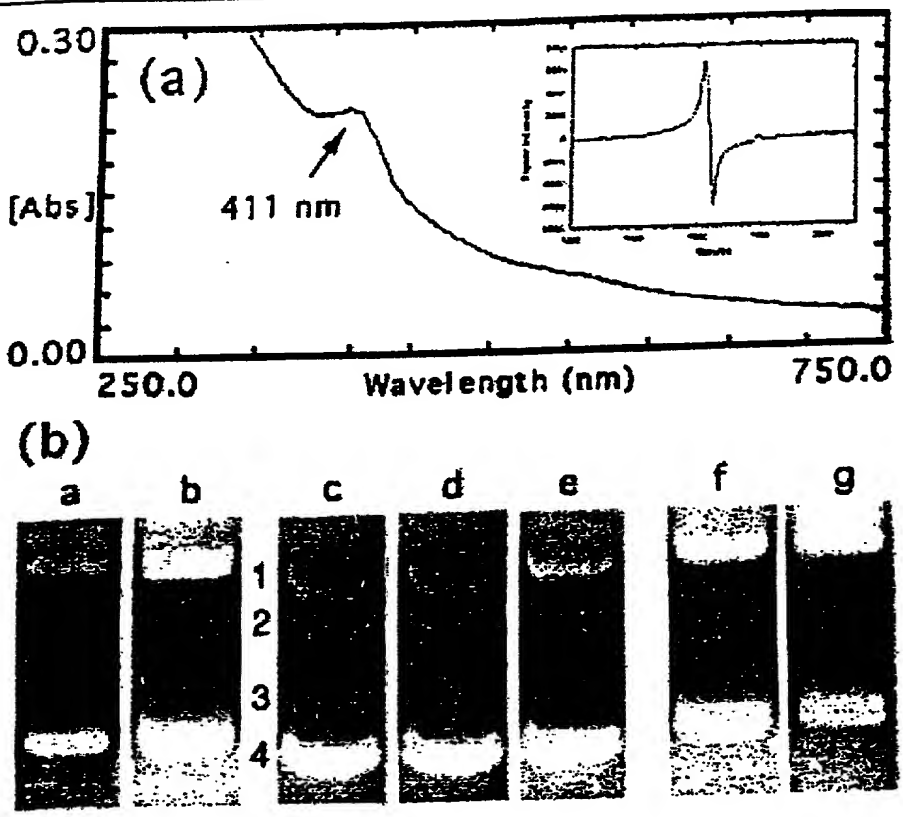


Fig. 7

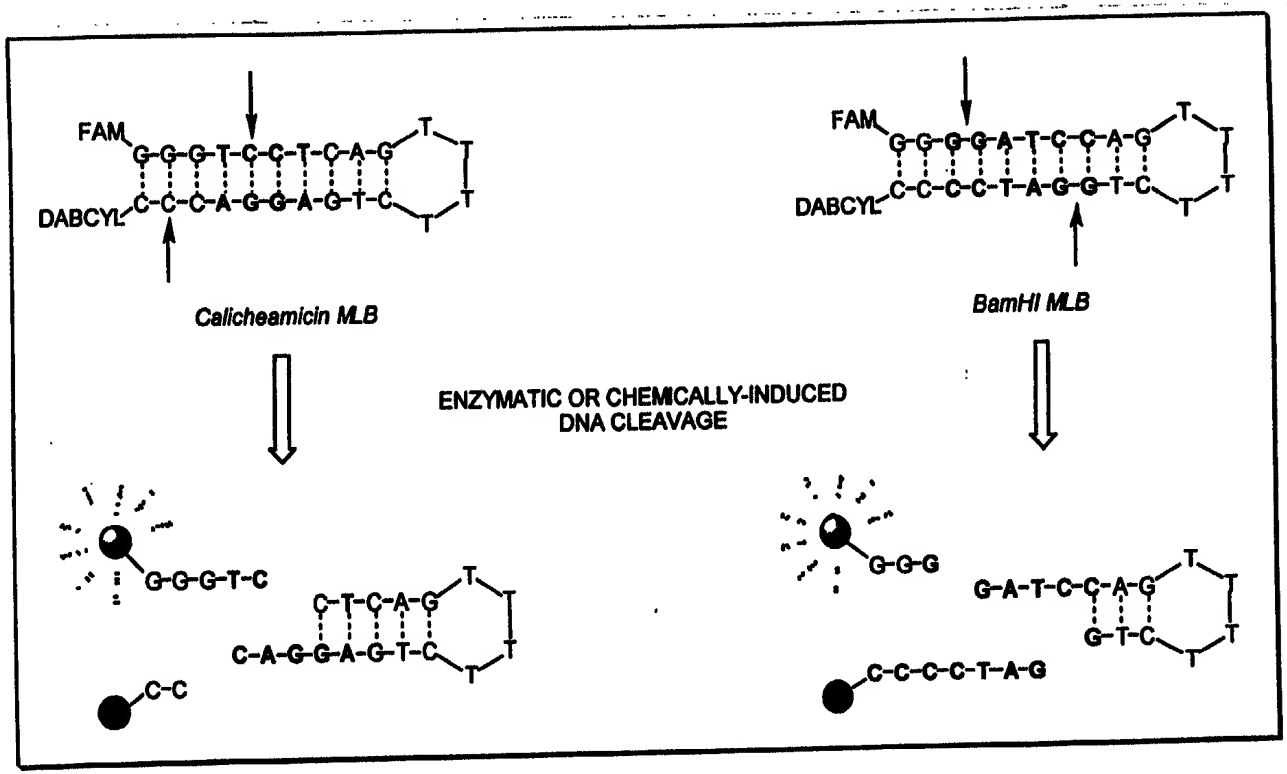
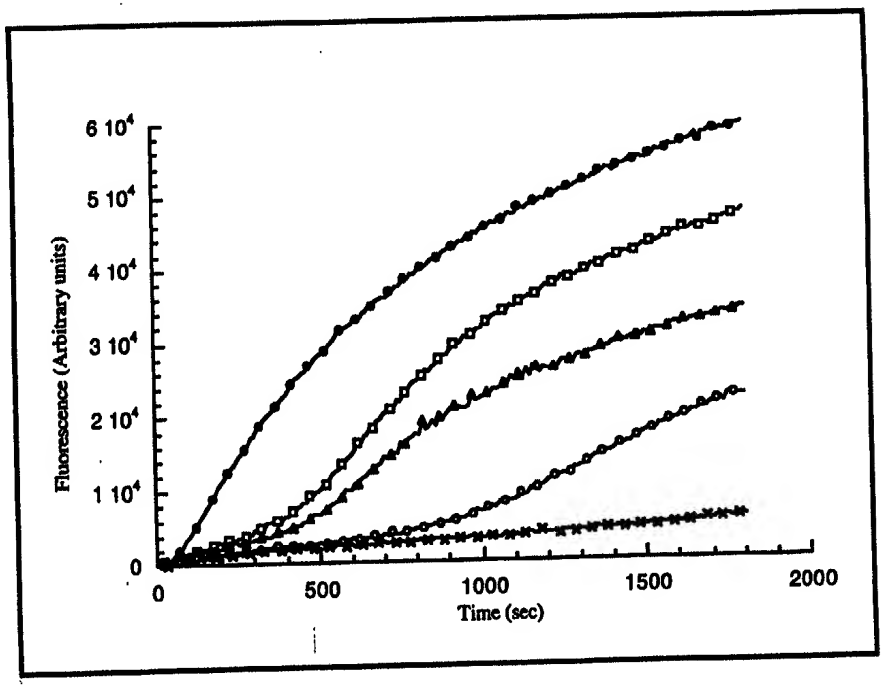


Fig 8



CalC (nmol)

0.0

1.3

2.6

3.9

5.2

Fig 9

Table 1. A comparison of cleavage efficiencies.

	Agent	V_{max} (nM sec^{-1})	Turnover (sec^{-1})[a]	Comparison to EDTA[b]
enzymatic	*BamHI*	0.024 ± 0.001	0.007[c]	4.8×10^5
small molecule catalyzed	*Esperamicin* A_1	0.007 ± 0.001[d]	0.009	6.1×10^5
	Calicheamicin γ_1^I	0.011 ± 0.002[d]	0.007	4.8×10^5
	Bleomycin	0.009 ± 0.001[d]	0.001	6.8×10^4
	Methidiumpropyl-EDTA	0.003 ± 0.001[d]	2.4×10^{-5}	1.6×10^3
	Methidiumpropyl-EDTA	0.118 ± 0.004[e]	0.002	1.6×10^3
	EDTA	0.002 ± 0.001[e]	1.5×10^{-6}	1.0

[a]defined as V_{max}/[Agent]; [b]fold enhancement over EDTA turnover; [c]also known as k_{cat}; [d]$[DNA]_{total}$ = 3.2 nM; [e]$[DNA]_{total}$ = 32 nM